

NOTE

Notes on the Biology of *Synaxis formosa* (Hulst) (Lepidoptera: Geometridae) in South Central Washington State

Scoble (1999) recorded ten species of *Synaxis* Hulst from North America while McGuffin (1987) discussed four from Canada. McGuffin (1987) indicated that several of the species fly late in the season and probably overwinter in the egg stage; the larvae appear in the spring, feeding on conifers and hardwoods. For three of the Canadian species, he referenced significant host data along with flight periods. One species, *Synaxis formosa* (Hulst), had unknown immature stages and no host information. McGuffin indicated the flight period as October and recorded the species only from British Columbia. Hulst (1896) described the species from Colorado and southern California.

Since 1995, we have been conducting a survey of the biological diversity of select groups of arthropods on the Hanford Site located in south central Washington State. Consult Zack (1998) and Zack et al. (1998) for a description of the Hanford Site and the results of other aspects of the overall project. One of the groups of primary interest has been the moth fauna. Herein we report on the life history, host plant, and light trap captures of *S. formosa*.

Larvae of *S. formosa* were collected at the Chamna Natural Area (46°15.15'N 119°16.85'W) located south of Richland (Benton Co.) on 31 March 2001. This site is not within the Hanford Site but lies along the Yakima River just outside the boundaries of the Site. The habitat contains significant stands of big sagebrush (*Artemisia tridentata* Nuttall) bordering the riparian habitat along the river. Larvae were taken by beating big sagebrush plants and observing materials falling to sheets placed under the plants. Two geometrid larvae less than 1 cm in length (probably second instars) were col-

lected; they appeared to be conspecific. Both larvae were placed on a potted sagebrush tubling and protected by placing a transparent plastic cover, with screened top, over the plant. The plant was kept outdoors, but out of direct sunlight to protect from overheating. One of the larvae died before attaining 1.5 cm, but the second survived, pupated, and emerged as an adult on 6 October 2001. The larva is a twig mimic as was noted by McGuffin (1987) for other species of *Synaxis*. The larva had pupated by mid-May and remained dormant throughout the summer. The pupal period was thus 130–140 days, much longer than the time period suggested by McGuffin (1987) for *Synaxis jubararia* Hulst (58–64 days). This longer pupal period may reflect the relatively long hot and dry summer period found in the south central Columbia Basin of eastern Washington where these observations were made. The reared adult was slightly smaller than wild caught individuals.

Adults were collected at several locations on the Hanford Site at 15-watt "black light" or 150-watt mercury vapor light. Collecting locations and dates are as follows: Benton Co. (all Hanford Site), SE base of Gable Mtn., 46°35.286'N 119°27.868'W, 15 Oct 1997 (5); Rattlesnake Spring, 46°30.447'N 119°41.887'W, 18 Oct 1996 (3) and 20 Oct 2001 (1); sand dunes, 46°31.369'N 119°21.192'W, 9 Oct 1996 (5) and 23 Oct 1996 (1). Grant Co. (all Hanford Reach National Monument—Saddle Mountain National Wildlife Refuge), 46°42.155'N 119°37.230'W, 18 Oct 2002 (3); 46°42.064'N 119°38.271'W, 18 Oct 2002 (3); 46°42.117'N 119°36.282'W, 18 Oct 2002 (1); 46°42.064'N 119°38.271'W, 5 Oct 2002 (14) and 25 Oct 2002 (1).

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